

18 F-Fluorodeoxyglucose Positron Emission Tomography/ Computed tomography in hepatocellular carcinoma: - Institutional Experience from Pakistan

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Introduction:

Hepatocellular carcinoma (HCC) is one of the top three most common causes of cancer-related deaths¹. Determination of prognosis aids in specifying the treatment options. Evaluating prognosis is a difficult task in patients with HCC as cirrhosis is often present². Studies have shown F18 FDG PET/CT as an excellent prognostic tool with an evolving role in the management of hepatocellular carcinoma (HCC)

Objective:

The purpose of this study was to justify the role of 18FDG PET/CT in determining the prognosis of patients with Hepatocellular Carcinoma.

Methods:

- Retrospective review of 18FDG PET/CT in patients with HCC.
- September 2010 to November 2020.
- Baseline: 39% [20]; Post-treatment: 55% [28]; Suspicion of HCC: 5.9% [3].
- Electronic Hospital Information System (HIS).

Results:

- Males=38, Females=13 [total n=51]. Age range: 14 - 71 years (mean=53.6).
- TNM staging of hepatic lesions identified: I = 10(19.6%), II=8(15.7%), 2(3.9%) in IIIa, IVa 10(19.6%) IVb =15 (29.4 %).
- Hepatic lesions 78% [n=40], Non-avid hepatic tumour 20% [n=8], Minimally avid lesions= 7.5% [n=3].
- FDG avid = 72.5% [n=29]. SUVmax range= 2.8 to 13.5.
- Out of 25 patients with metastasis, 16(64%) had significantly avid hepatic lesions. SUVmax of hepatic lesions in these cases ranged from 3 to 11.6 (mean = 7.24).
- Frequency of metastases was as following: regional nodes 10(40%), osseous 3(12%) pulmonary 2(8%), and muscular 2(8%). Tumour thrombus identified in 5(20%). One case each of metastasis involving spleen, kidneys and paracolic gutter.
- Of the 8 patients who underwent follow-up scan, 3/8 (37.5%) had metastatic disease with pulmonary metastasis in two and adrenal metastasis in one of the patients.

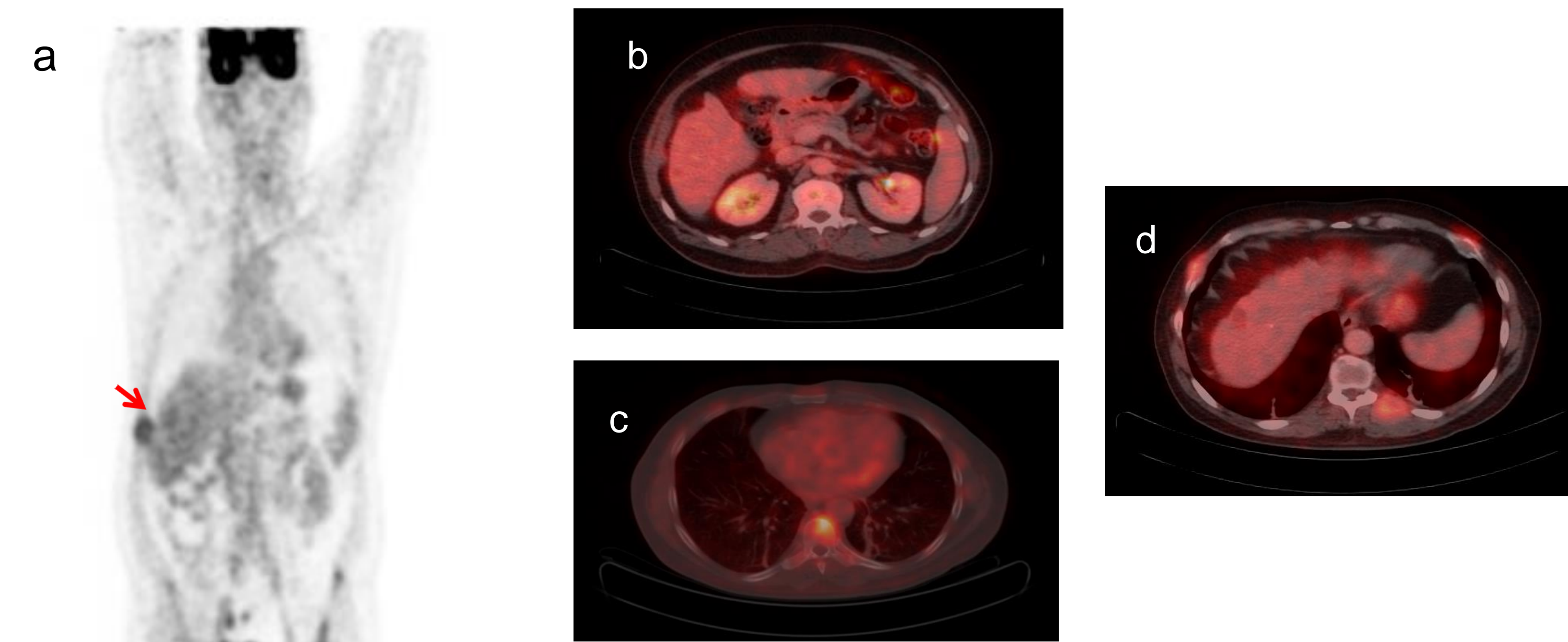
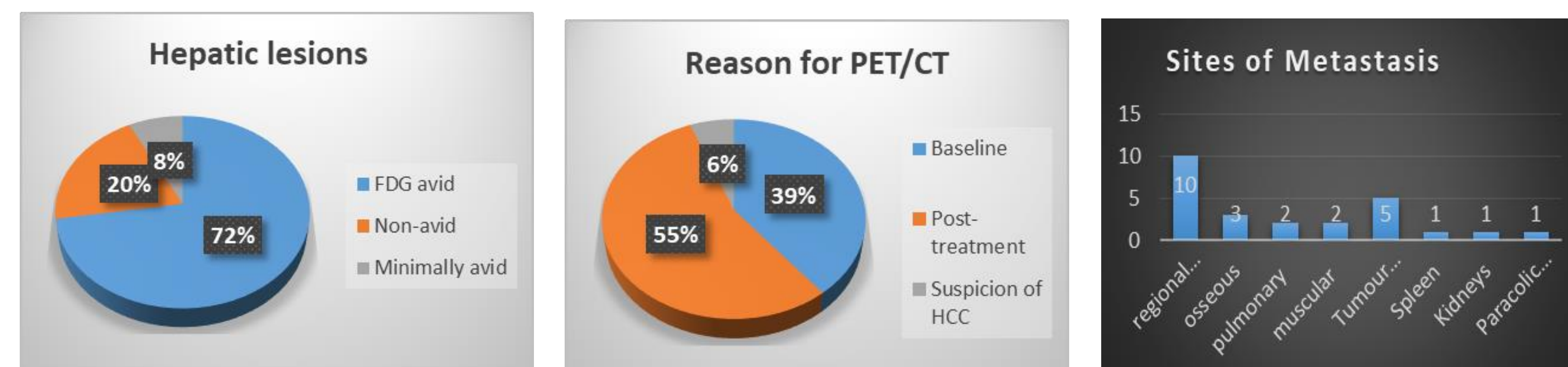


Figure 1: Staging scan of a 56 year old male, diagnosed with hepatocellular carcinoma, showing FDG-avid multifocal hepatic tumour in PET only image(a). Fused axial images show splenic(a), osseous (b) and muscular (c) metastatic deposits.

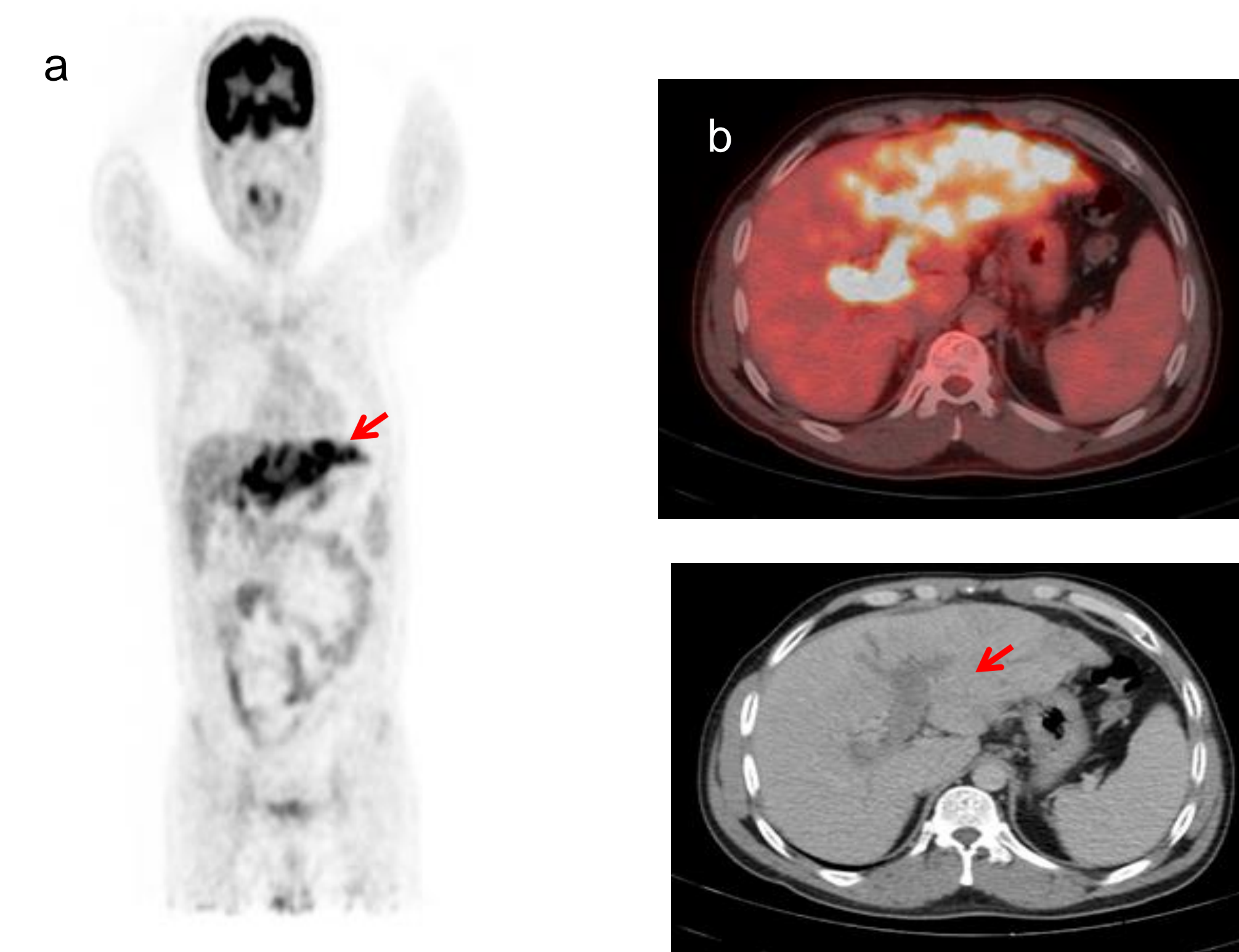


Figure 3: Restaging scan of a 42 year old male, showing diffuse tumour involving entire lobe in PET only image (a), with FDG-avid tumor thrombus in entire portal vein shown in fused axial (b) and CT only (c) images.

CONCLUSION

Our small series of HCC cases shows evidence of F18 FDG avidity in primary tumors and metastases. This is in conformity with the developing favorable evidence for its judicious use in HCC.

Cases:

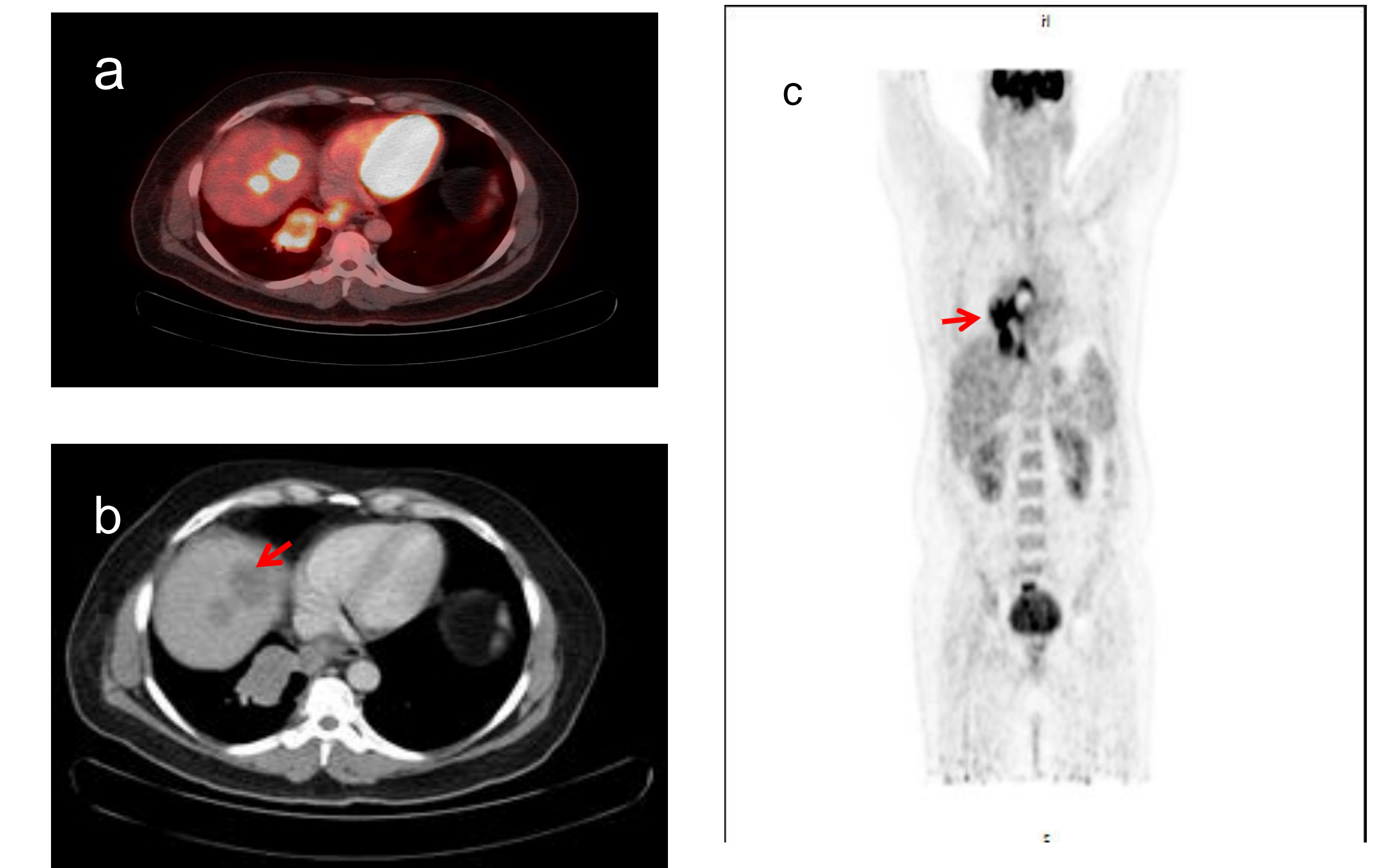


Figure 2 Re-staging scan of a 53 year old male with hepatocellular Carcinoma after liver transplantation, showing disease recurrence with avid hepatic hypodensities and right peri-bronchial lymph nodes, shown on fused axial (a), CT only axial (b) and PET only (c) images.

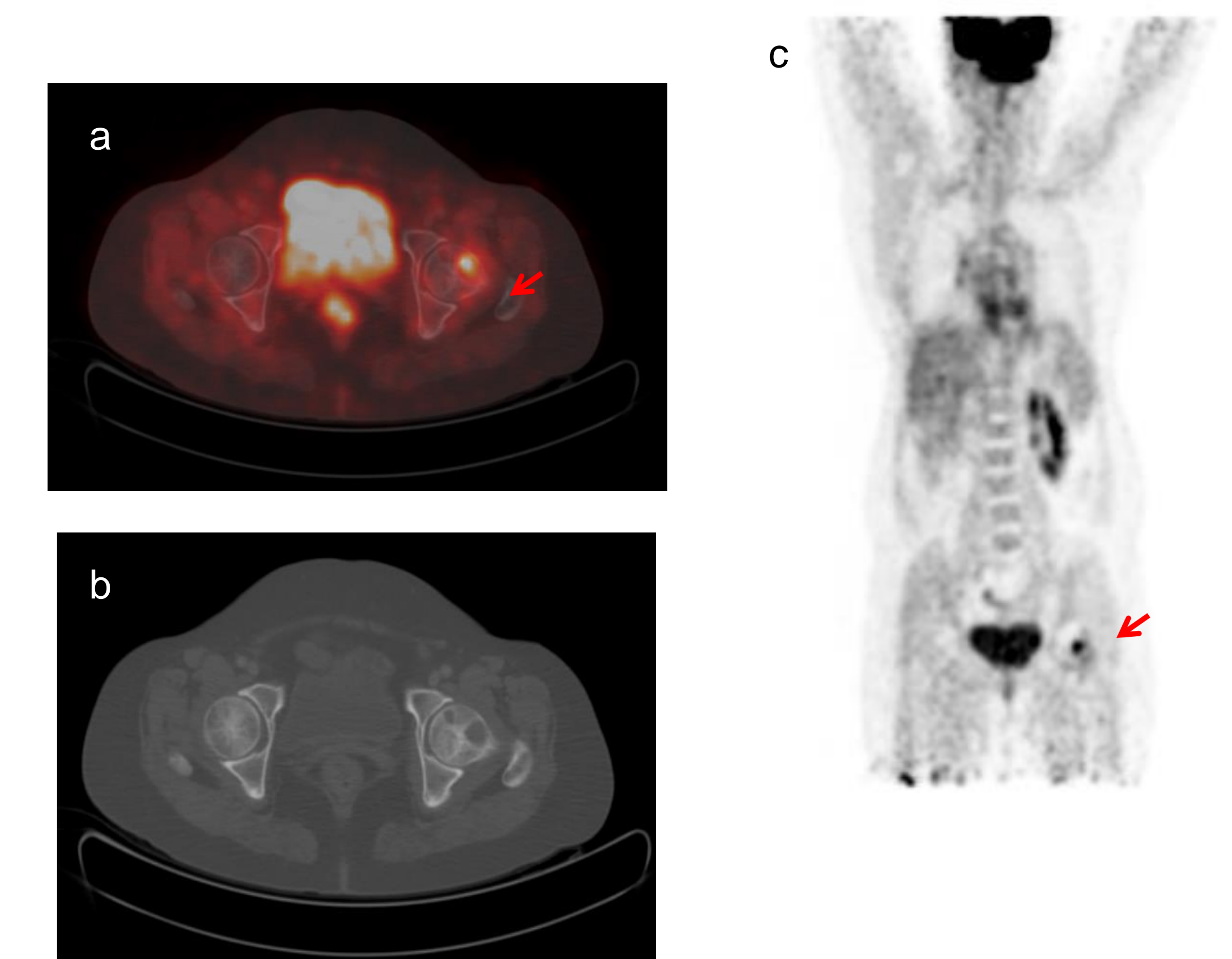


Figure 4: Re-staging scan of a 59 year old female after transplant, a metastatic lytic lesion in left femoral head in fused axial (a), CT only axial (b) images. No hepatic lesion is seen in PET only image (c).

REFERENCES

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